AMENDMENTS TO THE CLAIMS

Please amend the claims as they currently stand so that they are in accord with the following listing of the claims:

1. (currently amended) An apparatus for the classification of physiological events, comprising:

a signal input for the input of a physiological signal representing or constituting a physiological event;

a classification unit for classifying the physiological signal on the basis of its signal shape, the classification unit comprising:

a transformation unit which is designed to carry out transformation of the physiological signal in such a way that as the output signal it outputs a number of values representing the physiological signal and based on the transformation; and

a probabilistic neural network which is connected to the transformation unit to receive the values and which contains a number of event classes which represent physiological events and which in turn are each represented by a set of comparative values, which probabilistic neural network is adapted on the basis of the comparison of the values with the comparative values to effect an association of the physiological signal represented by the values with one of the event classes; and

an adjusting unit for automatically time-centering the physiological signal with respect to the time dimension in a time window of predetermined window width in said time dimension, and for outputting the time-centered physiological signal to the transformation unit, the adjusting unit connected upstream of the transformation unit.

2. (previously presented) The apparatus of claim 1, wherein:

the transformation unit is adapted for executing the transformation operation on the basis of wavelets and a transformation rule determining the values to be outputted using the wavelets.

3. (previously presented) The apparatus of claim 2, wherein:

the comparative values of the probabilistic neural network are based on a transformation procedure in which the same wavelets and the same transformation rule as in the transformation unit are used.

4. (previously presented) The apparatus of claim 3, wherein the probabilistic neural network further comprises:

at least one ascertaining unit for determining association probabilities of the physiological signal with the event classes on the basis of the comparison of the values with the comparative values of the respective event class and for outputting the ascertained association probabilities; and

a selection unit which is connected to the ascertaining unit for receiving the association probabilities and which is adapted to extract the highest association probability from the association probabilities and to associate the physiological signal with the event class having the highest association probability.

5. (previously presented) The apparatus of claim 4, wherein:

two or more sets of comparative values representing the same event class are present for at least one event class.

6. (previously presented) The apparatus of claim 5, wherein:

the ascertaining unit is adapted to determine a plurality of association probabilities for each event class which has two or more sets of comparative values representing the same event class, and the selection unit is so designed that, for those event classes which have two or more sets of comparative values representing the same event class, it forms average values of the corresponding association probabilities and upon extraction of the highest association probability uses the average values instead of the individual values.

7. (cancelled)

8. (previously presented) The apparatus of claim 6, wherein:

in those event classes which include two or more sets of comparative values representing the same event class, the sets of comparative values correspond to different offsets in the centering of the centered physiological signal.

9. (previously presented) An implantable medical device characterized in that it is provided with an apparatus for the classification of physiological events as set forth in claim 8.

10. (previously presented) The implantable medical device of claim 9, wherein:

the implantable medical device is in the form of a cardiac pacemaker or defibrillator.

11. (previously presented) The apparatus of claim 1, wherein the probabilistic neural network further comprises:

at least one ascertaining unit for determining association probabilities of the physiological signal with the event classes on the basis of the comparison of the values with the comparative values of the respective event class and for outputting the ascertained association probabilities; and

a selection unit which is connected to the ascertaining unit for receiving the association probabilities and which is adapted to extract the highest association probability from the association probabilities and to associate the physiological signal with the event class having the highest association probability.

12. (previously presented) The apparatus of claim 2, wherein the probabilistic neural network further comprises:

at least one ascertaining unit for determining association probabilities of the physiological signal with the event classes on the basis of the comparison of the values with the

comparative values of the respective event class and for outputting the ascertained association probabilities; and

a selection unit which is connected to the ascertaining unit for receiving the association probabilities and which is adapted to extract the highest association probability from the association probabilities and to associate the physiological signal with the event class having the highest association probability.

13. (previously presented) The apparatus of claim 1, wherein:

two or more sets of comparative values representing the same event class are present for at least one event class.

14. (previously presented) The apparatus of claim 11, wherein:

two or more sets of comparative values representing the same event class are present for at least one event class.

15. (previously presented) The apparatus of claim 12, wherein:

two or more sets of comparative values representing the same event class are present for at least one event class.

16. (previously presented) The apparatus of claim 14, wherein:

the ascertaining unit is adapted to determine a plurality of association probabilities for each event class which has two or more sets of comparative values representing the same event class, and the selection unit is so designed that, for those event classes which have two or more sets of comparative values representing the same event class, it forms average values of the corresponding association probabilities and upon extraction of the highest association probability uses the average values instead of the individual values.

17. (previously presented) The apparatus of claim 15, wherein:

the ascertaining unit is adapted to determine a plurality of association probabilities for each event class which has two or more sets of comparative values representing the same event class, and the selection unit is so designed that, for those event classes which have two or more sets of comparative values representing the same event class, it forms average values of the corresponding association probabilities and upon extraction of the highest association probability uses the average values instead of the individual values.

18. (cancelled)